

Atty. Docket No.: 012.P59029  
Serial No.: 10/779,322

### REMARKS

This Office Action response is being submitted in reply to the Office Action dated May 2, 2006. Authorization is hereby provided to charge Deposit Account No. 50-3703 in the event any fees or fee deficiencies are due.

#### *Claim Rejections - 35 USC § 102*

The Examiner rejected claims 1, 2, 4, and 5 under 35 U.S.C. § 102(e) as being anticipated by Kim et al. (US 2004/0185805).

Contrary to the Examiner's assertion, Kim does not teach or disclose "*amplifying each near-constant envelope signal in inverse proportion to its corresponding control signal*" as recited in independent claim 1 and its respective dependent claims. The Examiner cited to paragraph [0034] in Kim in support of the rejection. Said paragraph [0034] of Kim is reproduced below:

[0034] In other words, the signal component separator 102 and the frequency modulation unit 200 convert the predetermined signal  $a(t)$  into  $S_1(t)$  or  $S_2(t)$  by adding  $e(t)$  to the predetermined signal  $a(t)$  with half amplitude or subtracting  $e(t)$  from the predetermined signal  $a(t)$  with half amplitude. This process divides a phase-modulated signal having a non-constant envelope, like a CDMA signal, into phase-modulated signals having a constant envelope, which are necessary for performing a LINC operation. Thereafter,  $S_1(t)$  and  $S_2(t)$  are directly converted into radio frequencies (RF) by the frequency modulation unit 200 and then the radio frequencies are amplified by the signal amplification unit 300. Since the phase-modulated signals  $S_1(t)$  and  $S_2(t)$  have a constant envelope, they are hardly affected by non-linearity of the amplifiers 302, 304, 312, and 314 of the signal amplification unit 300 irrespective of whether they are high-level signals or low-level signals. Therefore, a highly efficient saturation amplifier can be used. The signal combiner 322 removes  $e(t)$  from a signal amplified by the signal amplification unit 200 so that an original phase-modulated signal having a non-constant envelope can be restored.

Atty. Docket No.: 012.P59029  
Serial No.: 10/779,322

Thus, it can be seen that paragraph [0034] of Kim des not disclose "*amplifying each near-constant envelope signal in inverse proportion to its corresponding control signal*". The Examiner is kindly reminded that to anticipate a claim, the reference must teach every element of the claim. MPEP § 2131. So, the Examiner is kindly invited to highlight or otherwise explain where said paragraph [0034] of Kim discloses, for example, or "*inverse*" or "*proportion*" or "*inverse proportion*", or "*amplifying each near-constant envelope signal in inverse proportion to its corresponding control signal*" as recited in claim 1, or to otherwise withdraw the claim.

### ***Claim Rejections - 35 USC § 103***

The Examiner rejected claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Kim et al. (US 2004/0185805) in view of Saed (US 2005/0003770).

As discussed with respect to claim 1, above, the patent to Kim does not teach "*amplifying each near-constant envelope signal in inverse proportion to its corresponding control signal*" as recited in independent claim 1. Therefore, since the cited combination does not teach or disclose all of the recited elements, claim 3 is not obvious, so the claim should be withdrawn.

The Examiner rejected claims 6, 7, 9-11, 13-15, 17-19, 21-23, and 25 under 35 U.S.C. § 103(a) as being unpatentable over Kim et al. (US 2004/0185805) in view of Raab (6,256,482).

Contrary to the Examiner's assertion, as with the discussion of claim 1, above, the patent to Kim does not teach or disclose:

wherein the bias of each variable amplifying means is capable of being adjusted to amplify each near-constant envelope signal in inverse proportion to its respective control signal to produce a corresponding amplified constant envelope signal

Atty. Docket No.: 012.P59029  
Serial No.: 10/779,322

as recited in independent claim 6 as amended herein. In the present rejection, the Examiner cited to paragraph [0037] of Kim for this recitation rather than to paragraph [0034] as with claim 1. Paragraph [0037] of Kim is reproduced below:

Atty. Docket No.: 012.P59029  
Serial No.: 10/779,322

[0037] Referring to FIG. 2, in the present invention, the power amplifiers 312 and 314 are forced to operate in saturation with a high-level input signal, and then an output level of the LINC power transmitter is adjusted by controlling quadrature biases output from the DC/DC converters 402 and 404. Bias signals, i.e., the base bias signal and the collect bias signal, are applied to the power amplifiers 312 and 314, respectively, by the DC/DC converters 402 and 404, respectively, and the DC/DC converters 402 and 404 are controlled by the bias/level controller 106 of the digital signal processing unit 100. Even under different sets of bias conditions, power of the same level can be obtained from the LINC power transmitter. The bias/level controller 106 controls the DC/DC converters 402 and 404 so that the power amplifiers 312 and 314 can operate under a predetermined set of bias conditions where their efficiency can be maximized. In short, it is possible to adjust the output power of the LINC power transmitter and to maximize the efficiency of the LINC power transmitter at any given output level by controlling the bias signals. Therefore, the LINC power transmitter according to the present invention can maintain high efficiency over a wider range of power levels. Since a power transmitter for a terminal changes its power level very slowly, the DC/DC converters 402 and 404 do not need to quickly perform switching operations, and thus it is rather easy to realize the DC/DC converters 402 and 404. The LINC power transmitter according to the present invention preferably controls both the base bias signal and the collect bias signal. However, the LINC power transmitter according to the present invention still can maintain high efficiency to some extent by controlling either the base bias signal or the collect bias signal.

Again, as with paragraph [0034] of Kim, it would appear that Kim does not teach or disclose *"amplifying each near-constant envelope signal in inverse proportion to its corresponding control signal"*. Likewise, with respect to claim 10, neither Kim nor Raab teaches or discloses:

wherein each adjustable gain amplifier amplifies a respective near-constant envelope signal with gain inversely proportionate to its respective control signal, thereby producing an amplified constant envelope signal

as recited in claim 10. Likewise, with respect to independent claim 14, neither the patent to Kim nor Raab teaches or discloses:

Atty. Docket No.: 012.P59029  
Serial No.: 10/779,322

adjusting the bias of the each adjustable gain amplifier using a respective control signal, thereby producing a plurality of amplified constant envelope signals amplified in inverse proportion to a corresponding control signal

as recited in independent claim 14 as amended herein. Likewise, with respect to independent claim 18, neither Kim nor Raab teaches or discloses:

wherein the adjustable gain amplifiers are capable of amplifying the outputs of the envelope detectors in inverse proportion to a control signal received from the signal decomposer at the control terminals

as recited in independent claim 18 as amended herein. Likewise, with respect to independent claim 22, neither Kim nor Raab teaches or discloses:

wherein the adjustable gain amplifiers are capable of amplifying the outputs of the signal decomposer in inverse proportion to a control signal received from envelope signal detectors

as recited in independent claim 22 as amended herein. Since the cited references do not teach or disclose all of the recited elements of the independent claims as discussed, above, the rejection should be withdrawn.

The Examiner rejected claims 8, 12, 16, 20, and 24 under 35 U.S.C. § 103(a) as being unpatentable over Kim et al. (US 2004/0185805) Raab (6,256,482) further in view of Saed (US 2005/0003770).

Since claims 8, 12, 16, 20, and 24 depend from independent claims 6, 10, 14, 18, and 22 that have been demonstrated, above, not to be obvious, it follows that claims 8, 12, 16, 20, and 24 are likewise unobvious. Therefore, the rejection should be withdrawn.

Atty. Docket No.: 012.P59029  
Serial No.: 10/779,322

**CONCLUSION**

In view of the amendments and the remarks above, Assignee submits that this application is still in condition for allowance. Entry of this amendment and allowance of the application are respectfully solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse action in any of the claims now pending in the application, it is requested that the Examiner telephone Kenneth J. Cool at (503) 439-6500 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

Berkeley Law & Technology Group, LLC

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